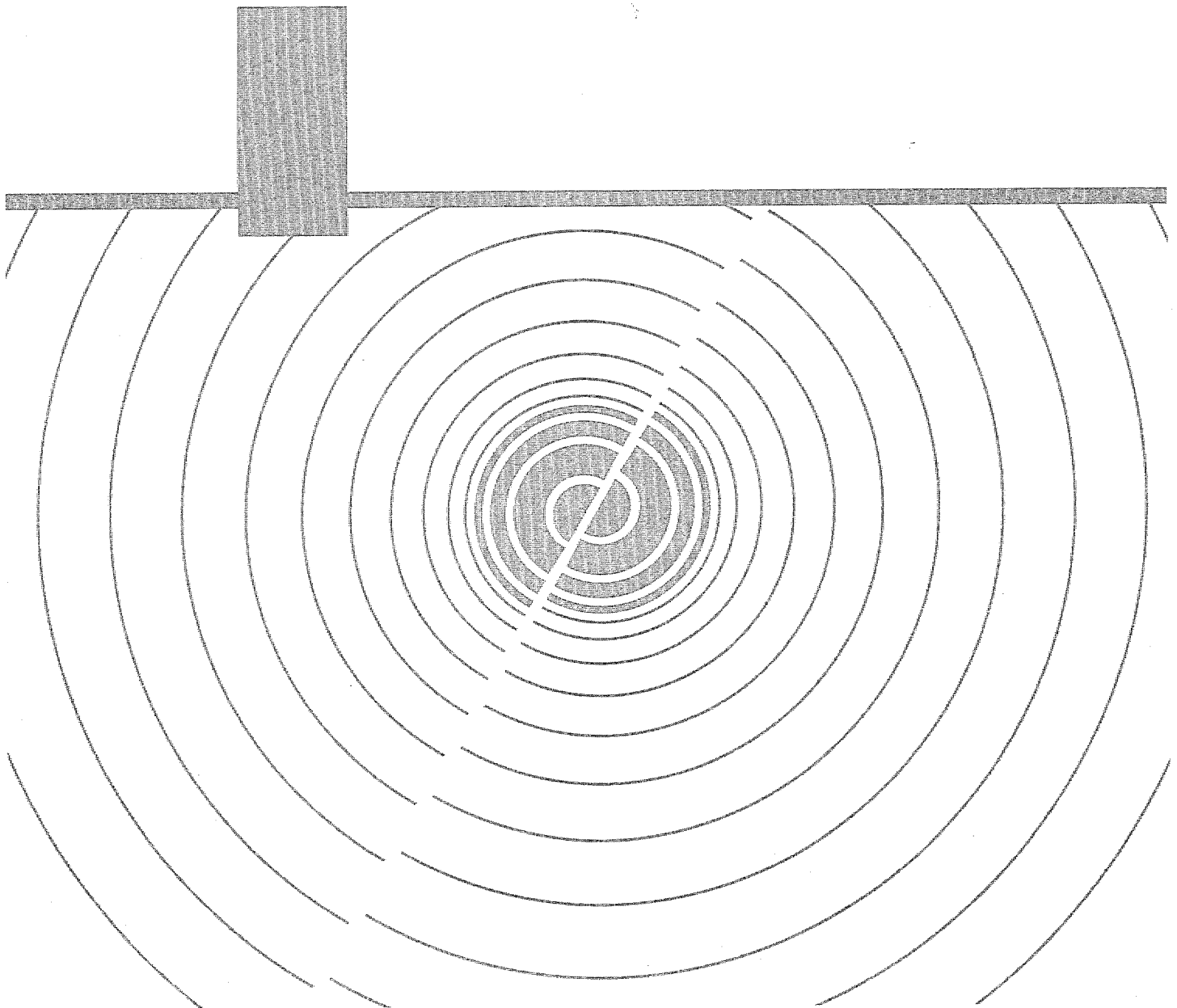

Appendix C:
Examples of Building Code Administration
by Local Governments



Appendix C

Examples of Building Code Administration by Local Governments

In order to illustrate the variety of local code administration practices, this appendix contains information from interviews conducted with officials from six cities and counties. The six examples include a large and small jurisdiction from each of the three code regions.

These case examples demonstrate the variety of practices used by jurisdictions across the United States. The seismic code requirements, plan review process, enforcement and inspection, procedures and fee schedules vary in each of these examples. The information presented here is to provide you with ideas on how to use model building codes in your locality.

Cities and counties in states that have adopted a model building code seem to have an advantage in that they can derive support from the state level. Cities in states with no codes find it harder to keep professionals in the building industry current with their code. This should be kept in mind as you convince your local governments to adopt a code or add seismic provisions. The

lessons provided in the examples should help you in this process.

This section also provides an in-depth review of how each jurisdiction deals with enforcement, inspection, and review. Without these elements, the model building code will be ineffective. The six examples cover this in depth and will provide you with a starting point in your area. This information is critical in having a model building code that saves lives.

The case study information was collected primarily through a series of interviews. A list of interviewees is included at the end of this appendix.

Carbondale, Illinois (BOCA, Small)

Carbondale is a city of 25,000 people located in southern Illinois. The city has one inspector, who also serves as the plan reviewer for the city. The Department of Building and Neighborhood Services' total annual budget is \$378,000. This office handles commercial and multifamily construction.

Table C.1 Overview of Local Building Code Administration by Local Governments

City/County	Population	Model Code	State Code Requirement	# of Inspectors
Carbondale, IL	25,000	BNBC	No building code req.	1
St. Louis County, MO	1,001,000	BNBC	No building code req.	10
Jonesboro, AK	50,000	SBC	Yes, Act 1100 (1991)	2
Memphis/Shelby Co., TN	850,000	SBC	Yes, since 1982	21
Pacifica, CA	40,000	UBC	Yes, since 1933	2
Clark County, NV	417,000	UBC	Yes, Nev. State Fire Marshal Reg.	79

Seismic Code Requirements

The city uses the *BOCA National Building Code* (BNBC), which incorporates seismic provisions.

Carbondale enforces the latest BOCA seismic building codes and standards. Seismic-resistance standards have always been required in Carbondale, and the city has been involved in a process of educating construction and design professionals as to the importance of seismic design, primarily through cooperation with the media. The media has assisted in stressing the potential danger of noncompliance. Ten years ago seismic provisions were not taken seriously by contractors, but practice is now much improved.

Carbondale's greatest limitation in enforcing building and seismic codes is the state of Illinois' weak support for requiring architects and engineers to stay current with codes. The state has no building code requirement, although the state does require seismic design of state-funded buildings. The state also requires licensing of structural engineers, who must demonstrate knowledge of seismic design. Carbondale makes sure its architects and engineers are following the rules, but most small cities in Illinois do not have the same ability, and the state is not assisting them.

Plan Review Process

Application must include building details as well as a site plan showing the location of the building on the site, lighting, disabled access, parking requirements, and water and sewer requirements. Building plans are required to be sealed by a professional, registered structural engineer from Illinois. The Department of Building and Neighborhood Services distributes the plans to other departments for review and approval. These other municipal departments include the Departments of Water and Sewer, Develop-



ment Services, Fire, Police, Public Works/Engineering, and Planning. The plan is checked not only for compliance with the BNBC but also for other requirements, such as zoning, disabled access, electrical codes, and so forth.

Upon review and approval from these departments, the plan is sent back to Building and Neighborhood Services, and a meeting is scheduled with the owner of the proposed site and a representative of each department. Final approval must be received from the city council. Once the plan has been approved, a building permit can be issued. The director of Development Services stamps and approves the final permit.

A plan review usually takes a month from submission of the necessary documents to final approval. Following review, a building permit can usually be issued in two or three days to one week, depending on the complexity of the building.

If an applicant wants to appeal a decision, he or she first talks to staff members and can then appeal to the Building Code Board of Appeals. The owner must first pay a \$15 fee to schedule a hearing. Carbondale uses the appeals process outlined in the BNBC.

FIGURE C.1 Main corner in downtown Carbondale, Illinois, a city of 25,000 people. Carbondale uses the BOCA National Building Code, which incorporates seismic provisions. (Photo: Planning Services Division, City of Carbondale)

Code Enforcement and Inspection

The present plan reviewer has experience in the construction trade, has three years toward an engineering degree, and has been certified by the Council of American Building Officials and BOCA for building inspector, building code official, and master code official. He is only responsible for nonstructural reviews. Architects and engineers are responsible for structural requirements. If any questions arise during the review process, the city requests the calculations of the architects or engineers for verification. The inspector states that BOCA is very supportive in answering or clarifying questions, as is the state architect's office.

Inspections are scheduled with the on-site construction manager depending on the progress of work. The required inspections include:

1. Designated location of building
2. Footing forms and steel
3. Foundation steel and anchor bolts
4. Framing
5. Rough electrical
6. Mechanical
7. Plumbing (by state plumbing inspector)
8. Final inspection

A few rough inspections to check for fire walls, plumbing, electrical, and mechanical requirements may be conducted prior to the final inspection. On larger construction sites unannounced visits may occur. The cost of inspections is covered by the building permit fee.

The number of staff members is adequate for the amount of work, except during summer construction. During this busier time, the inspector requests the assistance of housing inspectors in Carbondale.

Fee Schedule

Fees are established by the Department of Building and Neighborhood Services. The site plan review costs \$25. Building and electrical permit fees vary depending on the valuation of the building: \$2 for every \$1,000 of final construction costs. Plumbing fees are \$14 plus \$2 for every fixture in the building.

Additional costs are associated with noncompliance or postponement of construction requirements. In order to occupy a building prior to completion of site items, the owner must post a performance bond in the amount of the uncompleted items. If building code requirements are not met, the building inspector can stop work or issue an appearance in court. Court judges then set the fines. An owner may pay up to \$500 for a first offense. If the violation is not corrected after the first guilty finding, a fine of \$500 per day for every day of violation is set.

St. Louis County, Missouri (BOCA, Large)

The jurisdiction of St. Louis County covers the unincorporated area plus several municipalities that contract with the county for code enforcement. The county has ten inspectors per discipline (e.g., building, plumbing, mechanical, electrical) and nine plan reviewers in the building code review section. Two of these nine are licensed engineers and two are licensed architects. The supervisor of the building code review section is a licensed architect. Other plan review staff members have degrees in engineering or architecture. The annual budget for the permit division (including application processing and plan review staff) of the Public Works Department is \$1,780,000.

Seismic Code Requirements

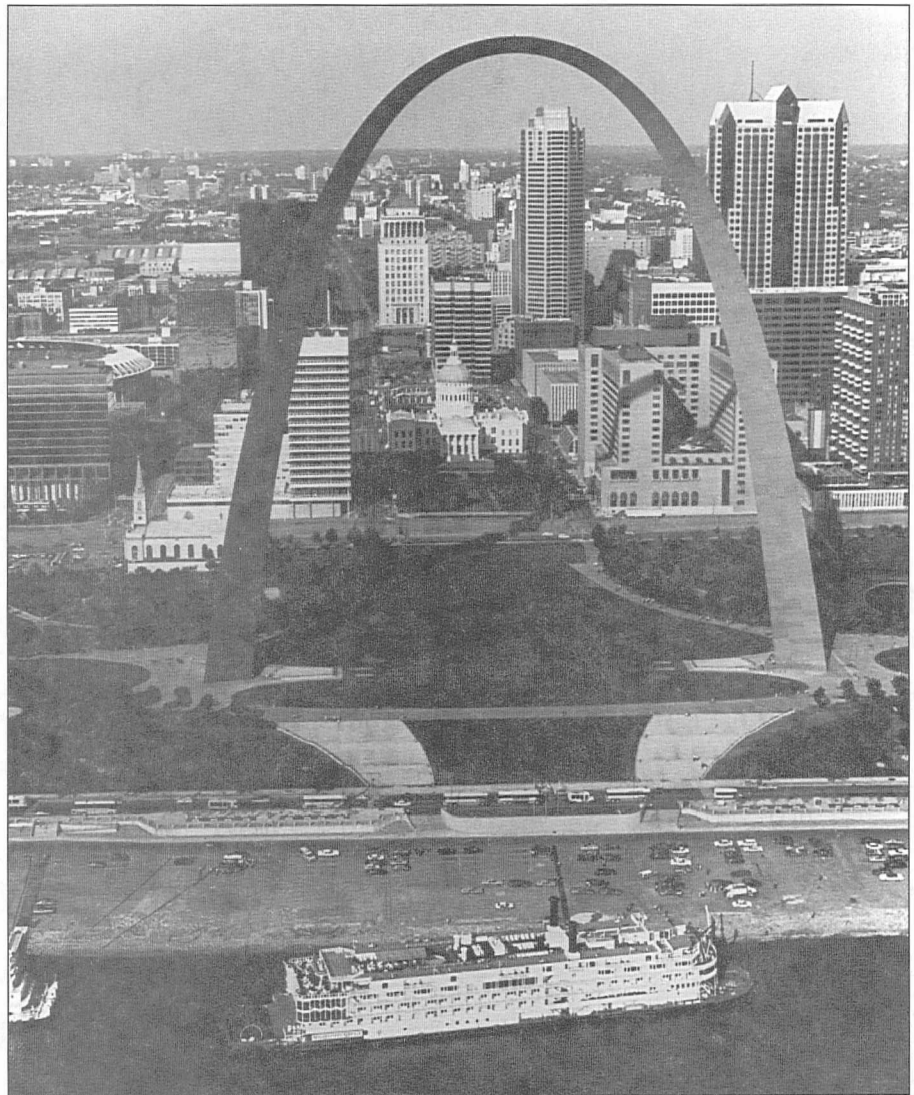
St. Louis County's seismic enforcement began with the adoption of the 1987 *BOCA National Building Code* in 1988. The 1993 BNBC was adopted in April 1994. New commercial structures are the projects that are primarily affected by seismic regulations, and single-family homes are exempt.

Missouri has no statewide building code requirement. It does, however, require seismic design in the 47 counties considered most seismically hazardous. The Geologic Hazard Preparedness Act (1990) requires that all new private buildings larger than 10,000 square feet and all new public buildings in the counties must "comply with the standards for seismic design and construction" of the BNBC or UBC.

Plan Review Process

Prior to submitting an application for a building permit, a preliminary meeting with plan reviewers is available. Applicants can also submit their plans for a preliminary review. This eases the review process, especially for larger projects.

Applications for a building permit are submitted to the Permit Application Center of the Permits Division, which serves as the central point within the submittal process. Four sets of complete drawings are required. The building code reviewer acts as the lead person in coordinating reviews from other review sections within the department. The building reviewer releases the projects back to the Permit Application Center, which coordinates approvals from outside departments and agencies and awards the permit once all requirements are met. Plan reviewers compute the permit fees based on estimated construction costs. Each plan reviewer has the authority to sign off on permits.



The first round of review, which results in each discipline's request for revisions, takes about five to ten working days. Once revisions are requested, the process is normally accomplished in three to four weeks, unless the design team is slow in responding.

There are two different appeals processes for someone who disagrees with a code requirement or decision. First, all individual plan reviewers have the authority to grant alternative solutions or equivalencies that would provide equal standards. Second, if the problem is beyond the plan reviewer's latitude or expertise, the director and/or the deputy of the Public Works Department can

FIGURE C.2 The City of St. Louis, as well as St. Louis County, Missouri, is protected by the *BOCA National Building Code*. (Photo: St. Louis Convention and Visitors Commission)

review the decision. If the problem is not resolved, it is referred to the board of appeals, an appointed body of five citizens, four of whom must either be licensed professionals or have construction experience.

Code Enforcement and Inspection

Regarding seismic enforcement, structural calculations are requested and reviewed for compliance. Enforcement is left primarily up to the structural engineers, who stand behind their calculations and designs with their signature. Many staff are still learning about the seismic requirements, as are design professionals in the area. Some of the larger firms have experience in California, so they are familiar with seismic design.

All new entry-level plan review staff members must have at least a college degree in a related field. The county is in the process of encouraging all plan reviewers to become certified within the next two to three years under the BOCA certification exams and to work toward their professional licenses. This drive for certified plan reviewers is due to the insurance industry's code effectiveness grading schedule, as described in chapter 6. In addition, staff attend local AIA- and BOCA-sponsored seminars.

The inspection process is a computerized call-in system in which contractors call to request an inspection. Unannounced visits do not normally occur. The types of inspections conducted include excavation (before the pouring of footings), forms of foundations, foundation, rough framing, rough frame-in for each of the disciplines, and a final inspection for each of the disciplines. There are also special inspections that are conducted by outside professionals. These professionals must be certified and approved by the inspection staff. Larger commercial projects require several inspection visits for each

category. Inspection costs are covered by the application fee. However, if an inspector is called out for something that is not ready for inspection, a charge of \$25 is assessed. There is also a \$500 minimum penalty or 1 percent of the project cost (whichever is greater) when violations occur, such as working without the proper permit, not following the approved plans, or not following code. Work load often exceeds staff availability, especially in inspections.

The department publishes a quarterly newsletter for the public. The newsletter details department procedures, code interpretations, code questions and answers, and enforcement policies. The newsletter is sent to professional organizations, who then distribute them to local municipalities and neighboring areas, such as St. Charles, Jefferson County, and Arnold. The county is trying to improve standards in the region.

Unfortunately budget cutting and reorganization have resulted in reduced personnel levels. However, a benefit is that the average quality and performance of staff have improved. The department enjoys strong support by county government in its goal of attaining code compliance.

Jonesboro, Arkansas (SBCCI, Small)

The Jonesboro Department of Planning and Inspection has two building inspectors and one plan reviewer for a city population of 50,000. Jonesboro is in an unusual building boom and has just recently added the second inspector. The department has an annual budget of \$300,000.

Seismic Code Requirements

The Standard Building Code applies to all buildings in Arkansas. Code updates are determined administra-

tively, by the State Fire Marshal. The importance of seismic design is underscored by Act 1100 (1991), which requires that all public structures be designed to resist seismic forces, in accordance with the latest SBC. It establishes zones more specific than those in the SBC, is self-updating, and sets forth penalties for noncompliance. It puts much of the responsibility on professional engineers, who enforce the Act by their signatures on plans.

Jonesboro enforces seismic building requirements. The municipality is in seismic zone 3. Jonesboro and the state of Arkansas have found that the state's relatively new seismic requirements have not stifled construction, as many builders and designers had feared. New construction has increased dramatically, and the state has experienced none of the problems anticipated. Today, seismic enforcement is taken very seriously and is viewed as a priority. Architects, engineers, and the building enforcement officials are making sure that every plan approved complies with seismic regulations.

Architects in Arkansas are beginning to become more knowledgeable of seismic provisions and back up Jonesboro officials in their decisions. Jonesboro staff members try to be alert to stamps by unqualified engineers and contact the state board if necessary. Jonesboro staff members attribute their success to their reliance on a written code upon which to base decisions. This reduces the use of personal opinions and political pressure to make exceptions.

Plan Review Process

An applicant for a building permit must submit a plan stamped by an architect and structural engineer. The structural engineer makes a statement regarding compliance with building and seismic codes. For single-family homes, duplexes, and triplexes the department does



not need as much detail, and the state has exempted these residential uses from seismic regulations. The department conducts all plan reviews, as well as zoning and fire inspections. Training for reviewers and inspectors is provided by SBCCI's services and certification programs.

It normally takes four to five days for permit approval. Jonesboro recommends that architects and engineers consult with the department before the application is submitted. This reduces problems and speeds the formal review process. Permits for residential structures are issued within one visit.

If an applicant wishes to appeal a decision, he or she contacts the board of appeals. The board consists of local citizens familiar with construction issues. The board is rarely used for building code appeals, however, since disputes arise more often from electrical and plumbing problems. A major way that building staff reduce potential problems is through the services of SBCCI. SBCCI has a phone consultation service to help determine if a ruling is accurate. This service is independent of the community, thereby providing professional, objective, and consistent advice.

Code Enforcement and Inspection

One of the inspectors acts as the building official. His or her signature must accompany the signatures of

FIGURE C.3 New construction in Jonesboro falls under the statewide Arkansas Standard Building Code. (Photo: City of Jonesboro)

electrical, plumbing, and mechanical inspectors on a sheet passed along with the plans prior to issuing the permit.

The inspection process is structured around three scheduled visits. The contractors and/or owner must contact the building officials when they reach the stages of foundation, framing, and final inspection. The electrical inspector also has scheduled reviews. Unannounced visits occasionally occur, typically for projects involving an untrustworthy contractor or for very large projects.

Fee Schedule

There is no initial application fee. A final permit fee based on construction valuation is charged after the plans have been reviewed and accepted. Jonesboro uses the SBCCI chart for estimating the average cost of each building type.

The fees for all building inspections are included in the permit fee. The building officials have authority to write citations to courts in case of noncompliance or postponement of construction. The building inspectors use the citation as a last resort, preferring to resolve problems more cooperatively. Stop work orders may be issued when a project does not have the proper permit for work being constructed.

Memphis, Tennessee (SBCCI, Large)

Memphis and Shelby County Building Departments were consolidated in February 1984. Since that date, the department has functioned as the Memphis and Shelby County Office of Construction Code Enforcement (CCE). CCE issues construction permits and trade licenses for all of Shelby County's unincorporated areas and the incorporated areas of Memphis, Germantown, Arlington, and Lakeland. Its jurisdiction area encompasses 850,000 residents.

The state of Tennessee has had a mandatory state building code since 1982. The state uses the latest version of the SBC and supports a staff of plan reviewers and inspectors. The state allows local governments to adopt and implement the SBC themselves, provided that the locally adopted version is not more than six years old.

CCE operates under the Division of Planning and Development, which is a joint city/county division. CCE is funded totally by fees for permits, licenses, exams, and reinspection fees. The fiscal year 1990-91 budget totaled \$5,684,324, including personnel, operation, and maintenance. The department is staffed with 123 employees, including clerical, field inspectors, plan reviewers, supervisors, and administrators.

CCE has six plan reviewers, eighteen building inspectors, three senior building inspectors, and one building chief. There are twelve mechanical inspectors with one senior and chief. Plumbing and electrical units both have eighteen inspectors, two seniors, and a chief. CCE reviews 143 plans per month.

Seismic Code Requirements

Memphis enforces seismic building codes and standards. Obtaining seismic provisions was a four-year-long struggle. Seismic codes were adopted in Memphis in April 1990

FIGURE C.4 Aerial view of downtown Memphis. (Photo: Memphis Convention & Visitors Bureau)

